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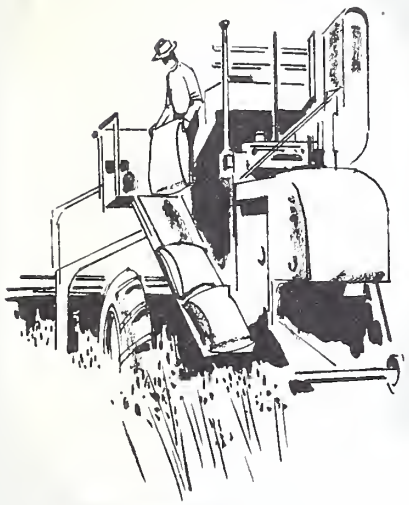
SOYBEAN PRODUCTION IN BRAZIL



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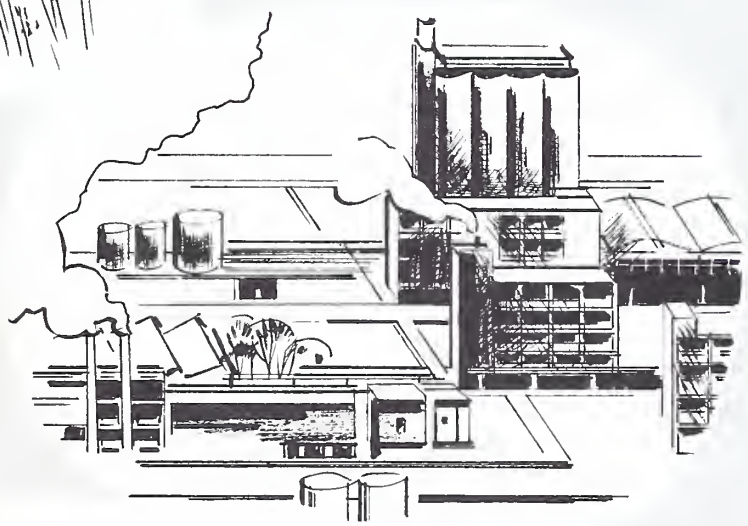

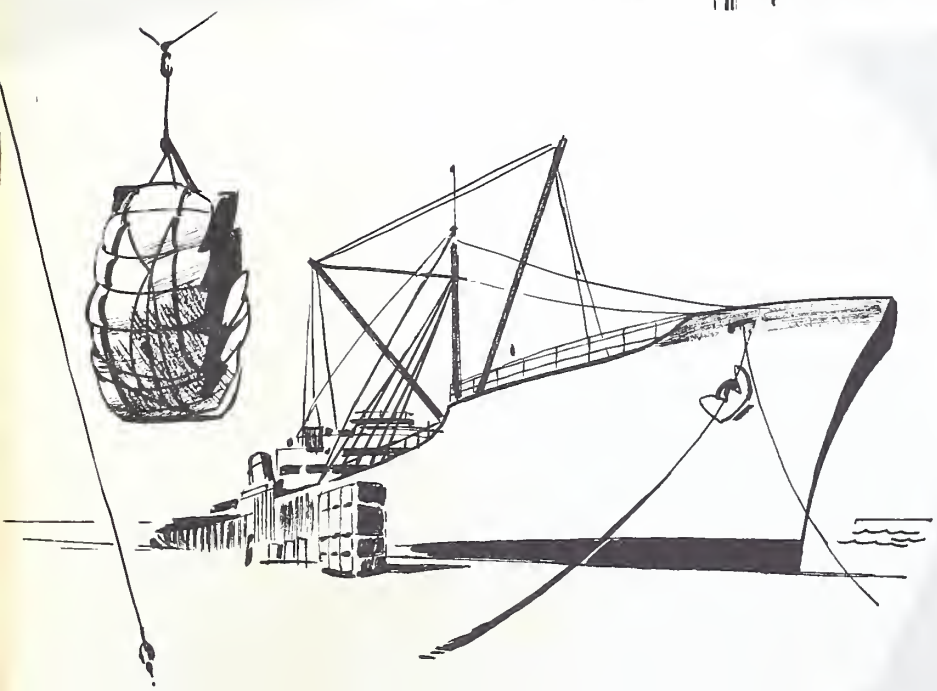

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FOREWORD

Brazil is an up and coming producer of soybeans. Having boosted its production to third-ranking in the world, it now expects to double it again in the next 5 years. Like the United States, Brazil produces beans that are high in oil content and are thus marketed for crushing rather than for direct food use.

The above facts warrant a close look at the Brazilian soybean industry—potential competitor with the U.S. industry in world markets. The study presented here is mainly descriptive and attempts to portray the current soybean situation and the prospects for continued expansion. Most of the data used are from official sources, and although they may have deficiencies, they are the most readily available.

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Soybean Production in Brazil

By Shackford Pitcher

INTRODUCTION

Brazil is the world's third largest producer of soybeans, exceeded only by the United States and Mainland China. In 1969 these three countries accounted for 94 percent of world production. Brazilian soybean output in 1970 is estimated at 1.3 million metric tons (47 million bushels), compared with 30.9 million tons in the United States and 6.9 million in Mainland China.

Soybeans were first introduced into Brazil about 60 years ago by Japanese immigrant farmers in the State of São Paulo. Production spread to other areas and has expanded rapidly in recent years. The estimated 1970 crop is about 23 percent above the official estimate of the 1969 crop and 95 percent higher than the average of the 1966-68 crops. Soybeans are a major source of edible oil for domestic use, as well as an important export crop.

GROWING OPERATIONS

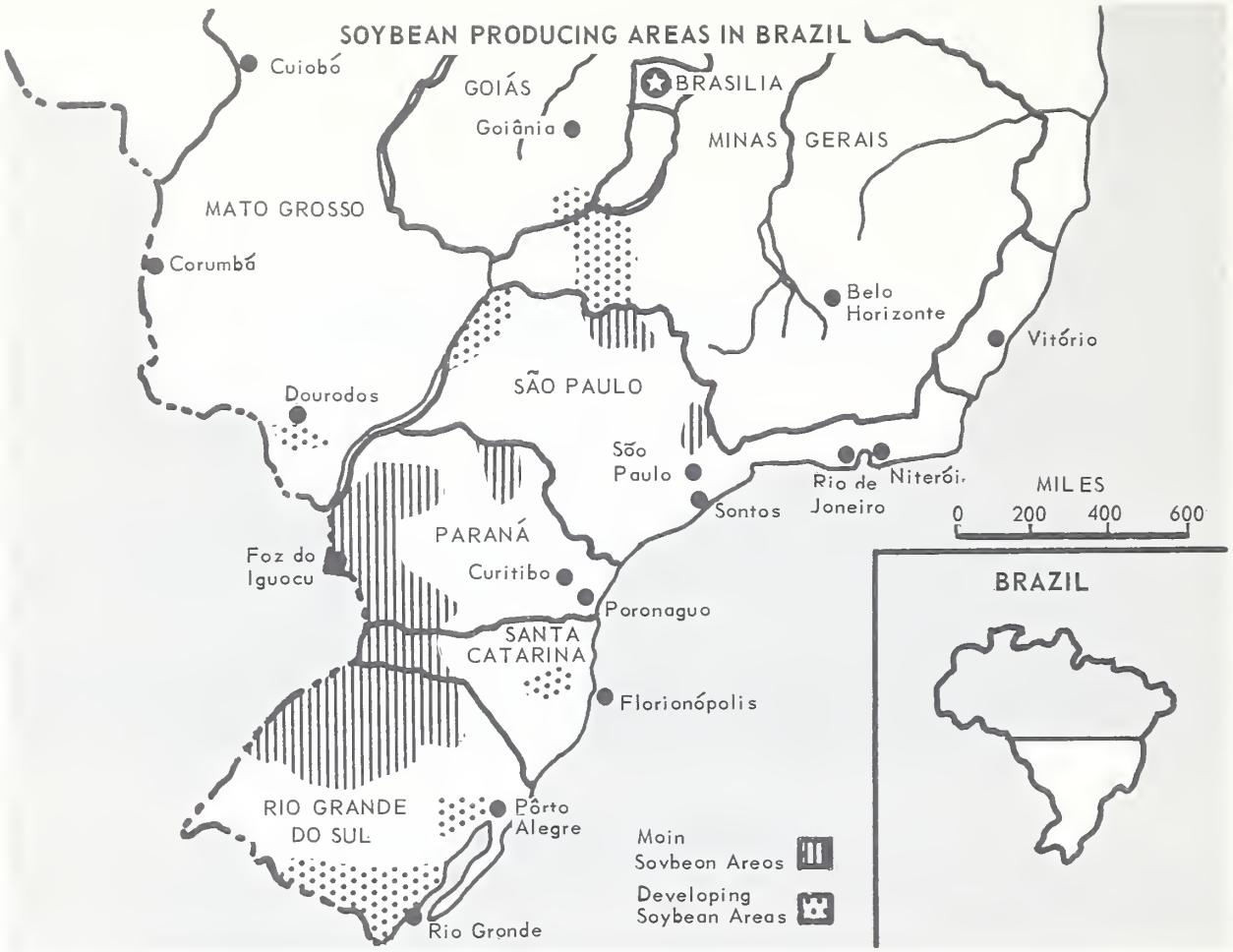
Producing regions

About 70 percent of Brazil's soybeans are grown in the southernmost State of **Rio Grande do Sul**, where they became an important crop during the early 1950's. Rio Grande do Sul is Brazil's major wheat-producing State, and fully mechanized soybean farming is associated closely with wheat production in the natural pasture areas of much of the State. Nonmechanized soybean farming takes place in the northwestern part of the State on small farms, where interplanting with corn is a common practice. The neighboring State of **Santa Catarina** grows some soybeans, generally under conditions similar to those in the northwestern part of Rio Grande do Sul.

Soybean farming in **Paraná** has expanded rapidly in recent years with the clearing of forest land for cultivation and the decline in the profitability of coffee, the State's number one cash crop. The improvement of the State's highway network has contributed to the expansion of crops like soybeans, as distant and formerly somewhat isolated farming regions are now linked to existing marketing and processing facilities.

Soybean production in the State of **São Paulo** has not shown the same rate of growth as other crops during the past 20 years. The explanation appears to be that soybean cultivation requires a fairly large capital input because of machinery needs, and thus it has not been so profitable as cotton, peanuts, and other crops that require a smaller investment.

At the present time other States in Brazil contribute little to the country's soybean production. Soybean cultivation is expected to move northward into parts of western **Minas Gerais** and southern **Goiás** with the introduction of new varieties adapted to these regions. It is likely that soybean growing will also expand in southern **Mato Grosso** in farming zones west of São Paulo and Paraná. Some land in the southernmost part of Mato Grosso is open natural grassland which can be readily cultivated, whereas other areas are forested and are in the process of being cleared for cropping or planting of pastures. In March 1970 some 290 miles of paved highway were opened in Mato Grosso, bringing the total mileage of paved highways in the State to about 400. The new highway links several major agricultural zones with important São Paulo markets. Agronomists working in **Bahia** are studying the possibility of expanding soybean production there, partly to take advantage of the State's large oilseed crushing capacity, which currently relies on a single raw material, castorbeans, and is considerably under-utilized.



Acreage

A total of 1.1 million hectares (2.7 million acres) were planted for the 1969-70 crop, an increase of 21 percent over the area planted to the 1968-69 crop and 2.6 times that of the 1964-65 crop. The sharp expansion in soybean cultivation is attributed to several factors. The combination of remunerative domestic prices for soybeans and the expansion of wheat cultivation are probably the leading ones. In Rio Grande do Sul and some parts of Paraná, soybeans are planted immediately after the wheat harvest, using the same land in a system of double cropping. Often no additional fertilizer is applied on the soybeans, with the crop relying solely on the residual effects of the fertilizer used on the wheat crop. The same tractors, combines, and other farm machinery used for wheat are utilized for soybeans, thus securing a more efficient use of capital. Most of the recent expansion has been on the mechanized farms described above and on farms in other areas—also mechanized, but generally using a single-cropping system. Practically none of the soybeans grown in São Paulo are double cropped with wheat although the State's soybean farmers are almost 100 percent mechanized.

Farm size

A large number of small farms, particularly in Rio Grande do Sul, cultivate soybeans. These small farms are frequently operated by second and third generation European settlers, and their settlement areas are referred to as *colonial* areas. Most of these farmers interplant corn with soybeans, with the soybeans as a cash crop and the corn for feeding hogs. The use of soybeans for feeding hogs is not uncommon in the colonial areas.

Because of the double cropping of soybeans with wheat throughout much of Rio Grande do Sul, a description of the wheat farms in that State would probably characterize accurately the farm structure for soybeans. According to recent studies made on the area planted to wheat per farm, the farms with up to 20 hectares (49.4 acres) in wheat accounted for 88.5 percent of the production units in Rio Grande do Sul, but only 29 percent of the wheat area. The other 11.5 percent of the farms growing wheat—medium and large farms—accounted for 71 percent of the total wheat area, of which 33 percent was rented land. The rented area was overwhelmingly concentrated in the mechanized farms.

São Paulo farmers growing soybeans tend to farm larger areas, sometimes partly rented, with an average of 100 hectares (247 acres) of soybeans each. Some farmers plant as few as 25 hectares (62 acres) of soybeans, with the largest farms planting 900 to 1,000 hectares (2,200-2,500 acres) each.

Yields

Soybean yields in Rio Grande do Sul declined substantially from an average of 1,487 kilos per hectare (22 bushels per acre) during 1952-66 to an average of 922 kilos per hectare (13.7 bushels per acre) in 1962-66. Planting of improved varieties, mainly of U.S. origin, is increasing, but covered only 20 percent of the State's soybean area in 1967. Yields have improved during the last three seasons, owing partly to better seed but mainly to favorable weather. The São Paulo Department of Agriculture (SPDA) estimates 1970 crop yields for São Paulo at 1,557 kilos per hectare (23.2 bushels per acre), compared with 1,260 kilos (18.7 bushels) for the 1969 crop, when yields were off because of dry weather.

Soybean yields, as indicated in official statistics, are not adjusted to reflect the portion of the crop interplanted with corn or other crops on a single-culture basis, so that the average yields are lower than if this factor were considered. According to official data for the 1967-68 soybean crop in Paraná, average yields were 908 kilos per hectare (13.5 bushels per acre), compared to yields of 1,121 kilos (16.7 bushels) from fields where soybeans were the only crop grown. The total area in soybeans that season was 226,994 hectares (561,000 acres) of which 153,044 hectares (378,000 acres) or 68 percent was interplanted with other crops, primarily corn.

Farmers have generally used seed saved over from past crops or purchased from other farmers, but now are usually able to obtain selected seed. Rio Grande do Sul recently organized a seed-multiplication program, and for the 1970 planting season 43,790 metric tons of soybeans for seed were inspected and tested, an increase of over 75 percent compared with the 1969 season. Thirty-six firms were registered as seed processors under the 1969-70 program, 22 of them wheat cooperatives. These cooperatives accounted for 90 percent of the seed receipts. Mississippi State University is working with the Brazilian Ministry of Agriculture under a United States Agency for International Development (USAID) contract which provides for technical and financial support for Brazilian seed programs. The seed testing and inspecting activities in Rio Grande do Sul have benefited greatly from the USAID program, which is also operating in the other major soybean producing States. The most common varieties planted in Rio Grande do Sul are L-326, Majós, Bienville, and Bragg. In Paraná the Pelican variety (derived from U.S. genetic material) is very common, but is being partly replaced by Bragg, Bienville, Hill, and Hardee.

In São Paulo, Pelican is the most popular variety. The Agronomic Institute at Campinas (IAC) does much of the research work on soybeans and has selected two varieties, IAC-2 and L-1, originating from Hardee, which show a great deal of promise. During 3 years of testing, yields of these two varieties averaged one-third more than those of Pelican.

Production costs

The São Paulo Department of Agriculture (SPDA) calculated the direct costs of producing the 1969-70 soybean crop at Cr$382.10 per hectare (US$34.25 per acre). This cost calculation was based on a mechanized operation following cultural practices recommended by the SPDA's extension service. Detailed cost data are not available for the more important soybean producing States of Rio Grande do Sul and Paraná although costs in the latter on farms using a single-cropping system probably do not differ substantially from those shown in the SPDA study. Direct costs of farms in Rio Grande do Sul and Paraná that double crop soybeans with wheat are usually less, but average yields are lower, too.

TABLE I ESTIMATED PRODUCTION COSTS AND RETURNS FOR SOYBEANS IN SÃO PAULO, 1969-70 CROP

Items	Production costs	
Operational costs:	*Cr$/alqueire*	*US$/acre*[1]
Tractor	185.48	6.87
Cultural operations	80.22	2.97
Combine	55.72	2.06
Labor	149.10	5.52
Subtotal, operations costs	470.52	17.42
Materials:		
Seed and seed inoculant	90.00	3.33
Fertilizer	186.75	6.92
Lime	72.00	2.67
Insecticides	33.49	1.24
Bags and string	72.00	2.67
Subtotal materials	454.24	16.83
Total direct costs	924.76	34.25
Estimated returns, assuming yield of 60 bags (60 kilo) per alqueire (22 bu/acre)	1,236.00	45.76
	Cr$/bag	*US$/bu*
Average price received by São Paulo farmers, April 1970	20.60	2.08

[1] Using exchange rate of Cr$4.50 equals US$1.00 and 1 alqueire equals 6 U.S. acres.

Source: *Despesas diretas das principais culturas do Estado de São Paulo,* Instituto de Economia Agricola, 1969.

GOVERNMENT PROGRAMS

Technical research

The Ministry of Agriculture's agricultural research institute (IPEAS) at Pelotas has conducted some work on soybeans and at present has a program for the production of certified seeds in cooperation with Rio Grande do Sul farmers. The institute has received funds tied to soybean research from INSTISOJA, a private organization promoting soybean production and supported by soybean crushing and exporting firms. The Rio Grande do Sul Department of Agriculture's plant crops service (DPV) has a research and experimental division (DPE) with a central research institute in Pôrto Alegre and 13 experiment stations throughout the State. About 20 percent of the DPV's research has been done on soybeans; this research has been financed largely by INSTISOJA.

Government research on soybeans has a longer tradition in São Paulo, where selection work was initiated in 1925 at São Simão Experiment Station based on a collection of about 50 U.S. varieties. Most of the work is now being done by the Agronomic Institute at Campinas, and, in addition to varietal breeding and selecting, involves tests on soybean adaptation to *cerrado* (savanna-type) land. Yields of over 2,470 kilos per hectare (36 bushels per acre) were achieved on cerrado under complete liming and fertilizer programs. Although there are no estimates of the percent of cerrado adaptable to soybean production, it is significant to note that 20 percent of Brazil's soils are included in the cerrado classification.

Research recently completed by the Federal University of Viçosa in the State of Minas Gerais is responsible for the selection and introduction of two new soybean varieties, Visoja and Mineira. These varieties are expected to contribute substantially to the northward expansion of soybeans in western Minas Gerais, southern Goiás, and Mato Grosso.

Extension

The soybean industry's private organization, INSTISOJA, has played a valuable role in promoting greater cultivation of soybeans. It maintains two agronomists who travel throughout Rio Grande do Sul contacting farmers directly and at meetings to discuss problems and give advice on growing soybeans. As noted earlier, INSTISOJA

sponsors research done at State and Federal stations. A similar private institute for oilseeds (INSTIOLEOS) was organized in São Paulo in March 1970 and is expected to contribute successfully to expansion in Paraná, São Paulo, and Minas Gerais using methods already proven in Rio Grande do Sul.

Most of the rest of the extension work on soybeans in Rio Grande do Sul is handled by agronomists employed by the wheat cooperatives and by agronomists working with the government extension service (ASCAR), which in 1967 had 84 local offices, 13 regional offices, and 115 university-trained agronomist extension agents. Soybean extension work accounts for about 5 percent of ASCAR's contacts with farmers, and its activities are concentrated in the colonial areas where small farmers predominate.

São Paulo probably has the most complete and efficient extension service anywhere in Brazil. It is a State service under the São Paulo Department of Agriculture (SPDA) and has one or more agronomist extension agents in nearly each county. This service is closely connected with and supported by other SPDA agencies, such as the Agronomic Institute (IAC) and the Biological Institute; the latter works on plant diseases. Paraná farmers have often relied on technical support from these SPDA agencies and the extension efforts of private companies and organizations, as well as State and Federal agencies.

MARKETING, PRICES, AND FARM CREDIT

The Rio Grande do Sul wheat cooperatives play a major role in marketing soybeans for the State's farmers, who are members of regional cooperatives. These cooperatives, totaling 43 in 1968, operate cleaning and warehousing facilities, which are generally used by members for their soybeans if they lack such equipment on their farms. Most of the soybeans are handled in bags until sold to a processor or exporter.

Practically all of Brazil's soybeans for export have been produced in RIo Grande do Sul, and moved from the producing regions to the ports by rail. Some wheat cooperatives have exported soybeans, but usually they deliver to an exporter when handling the selling of a member's crop.

Paraná and São Paulo farmers generally do not market their soybeans through cooperatives, but sell directly to processors or local dealers. One exception is the large cooperative organization, COTIA, comprised mainly of farmers of Japanese descent, which is very active in these two States and is handling a growing share of the soybeans produced by its members. The importance of cooperative marketing in Paraná may grow, as many of the coffee cooperatives are diversifying their marketing operations.

The prices received by soybean farmers averaged about Cr$21.20 per 60-kilo bag, bulk basis ($2.09 per bushel), in Rio Grande do Sul for the 1970 crop, compared to Cr$23.00 ($2.27) in Paraná and Cr$23.35 ($2.30) in São Paulo. The reasons for the better prices paid in Paraná and São Paulo is the higher oil content in the soybeans produced in these two States, plus the proximity to the major consuming markets for oil and meal. Soybean prices often fluctuate a great deal throughout the season, with lowest prices generally received at harvesttime. Rio Grande do Sul prices ranged from a low of Cr$17.40 per bag ($1.72 per bushel) to a high of about Cr$27.25 ($2.69) for the 1970 crop. The range in Paraná was from a low of Cr$17.00 ($1.67) to a high of about Cr$31.50 ($3.11).

The Brazilian Government's minimum price program includes soybeans. Support prices during recent years have been set at levels considerably below prevailing prices; thus, the Government has not found it necessary to purchase soybeans to support the market. The market in Rio Grande do Sul has been directly influenced by world market prices since some of the State's soybeans are exported; competition by exporters for export availabilities is strong.

SOYBEAN SUPPORT PRICES IN BRAZIL

State and region	1969 crop[1]		1970 crop[2]		1971 crop[3]	
Rio Grande do Sul:	*Cr$/bag*	*US$/bu*	*Cr$/bag*	*US$/bu*	*Cr$/bag*	*US$/bu*
Ijuí	10.40	1.15	12.99	1.28	17.19	1.53
Montenegro	10.06	1.12	12.65	1.25	17.04	1.52
Santa Catarina	9.93	1.10	12.52	1.24	16.79	1.50
Paraná:						
Rolándia	10.21	1.13	12.80	1.26	17.36	1.55
Cruzeiro do Oeste	9.47	1.05	12.06	1.19	16.41	1.46
São Paulo	10.05	1.11	12.64	1.25	16.85	1.50

[1] Using average exchange rate of Cr$4.10 equals US$1.00 in effect May-August 1969. [2] Using average exchange rate of Cr$4.60 equals US$1.00 in effect May-August 1970. [3] Assuming average exchange rate of Cr$5.10 equals US$1.00 to be in effect May-August 1971.

The main usefulness of the Federal Government's minimum price program so far as soybeans are concerned is the setting of a base for crop financing. The government obliges processors to pay at least the specified minimum for soybeans in order to qualify for loans for working capital.

The official farm credit programs generally make production loans and loans for specified capital investments, such as farm machinery, available at low interest rates. However, interest rates must be considered carefully, as there is a high rate of inflation in Brazil. Although the inflation rate is falling, price increases during the 12 months July 1969-June 1970 totaled 19.1 percent as measured by the internal wholesale price index.

The government makes available farm loans through Federal and State banks and obliges commercial banks to allocate about 10 percent of their loans for agricultural production and marketing purposes. In Rio Grande do Sul the wheat cooperatives supervise loans made to members for growing soybeans. Annual interest rates and loan charges currently in effect under the credit program (FUNAGRI) total 13 percent for small farmers, 15 percent for cooperatives, and 17 percent for large farmers. Until July 31, 1970, there was a special program (FUNFERTIL) for financing fertilizer whereby the farmer paid the cash-price equivalent up to 60 days after harvest, with the government subsidizing some or all of the interest and financing charges. The FUNFERTIL program has been replaced by a new program (FUNDAG), which has low interest rates (about 7 percent per annum) to the farmer and extends the repayment advantages to other inputs, including pesticides. Most soybean growers have been taking full advantage of these farm credit programs, as they are farming in areas of the country where the commerce and banking systems are well organized.

DOMESTIC UTILIZATION

About 66 percent of Brazil's soybean crop is processed domestically, and about 8 percent is used for seed and feed. The remainder is available for export.

Processing

During 1966 to 1969, the latest period for which official data are available, Rio Grande do Sul processed nearly 70 percent of the soybeans crushed for oil in Brazil, with Paraná and São Paulo almost equally dividing the remainder. There are three large mills in Rio Grande do Sul that crush soybeans almost exclusively; two large mills in Paraná and about 6 large ones in São Paulo handle soybeans as well as other oilseeds. All of these States have medium-sized and smaller mills crushing soybeans, some of which work exclusively with soybeans. It is estimated that 99,157 metric tons of soybean oil were produced in 1969, 45 percent above the final estimate of the 1966-68 average output. Soybean crushing during 1970 is expected to total 800,000 tons of beans, with an oil output of 136,000 tons.

There has been a great deal of expansion in oil crushing capacity since 1965 in Paraná and São Paulo, from both the enlargement of existing mills and the construction of new ones. In Paraná alone some 26 mills were built between 1965 and 1969, all of which were partly financed by a State Government development agency. The soybeans grown in Paraná and São Paulo have a higher oil content than those grown in Rio Grande do Sul and thus are keenly sought after by local mills. In order to operate as long as possible, many of these mills purchase soybeans from Rio Grande do Sul, whereas others process the other oilseeds.

The Ministry of Agriculture maintains a registry of firms crushing oilseeds. The latest report, containing data for 1967, lists 28 firms in Rio Grande do Sul crushing soybeans, one of which operates two mills. Many of the firms specialize in soybeans. About half also crush flaxseed, and several firms crush three or more different oilseeds, including peanuts and tungnuts. Three of the four cooperatives crushing soybeans in Rio Grande do Sul are wheat cooperatives. Only one firm in Santa Catarina crushed soybeans in 1967. The Ministry's list contains the names of 11 firms crushing soybeans in Paraná, only one of which did not crush other oilseeds. The Paraná mills generally crush peanuts and castorbeans, with several also crushing cottonseed and sunflowerseed. São Paulo has 15 firms crushing soybeans; they operate a total of 25 mills. None of the São Paulo firms listed specializes in soybeans alone; practically all crush peanuts, and over half crush other oilseeds as well, such as cottonseed, castorbeans, and sunflowerseed.

The Ministry of Agriculture's registry does not show the capacities of the oil mills or the types of equipment installed. Most of the mills are located in the countryside in oilseed growing areas, although several of the largest

Above left, contour plantings of soybeans in Rio Grande do Sul on a large farm near Passo Fundo; the farm is in a typical wheat-soybean area. Above right, man looks at his soybean field in the Mogiana district of São Paulo about 2½ months after planting; estimated yield on this 45-acre field is 18 bushels per acre. Below right, the mechanical harvesting of soybeans by combine in Rio Grande do Sul.

Above and below, two test plots of soybeans at different stages of development at an experimental farm in Rio Grande do Sul.

ones are located near major cities like Pôrto Alegre and São Paulo. A survey of the capacities of vegetable oil mills in the State of São Paulo, published in 1967, indicates a wide range in output, with the smallest producing 8 metric tons of oil and the largest, 220 tons per 24-hour work day. Average crushing capacity per mill was 80 tons daily, but at the time of the study mills were operating at about 60 percent of capacity, mainly owing to insufficient raw material. Both continuous and batch processes are used by Brazilian oil mills, with the former used by the large plants and the latter common in the small and medium-sized plants. The large firms have their own refining equipment, whereas many of the smaller firms generally sell their oil as soon as it is extracted or have it refined on a custom basis.

Brazilian firms manufacture practically all the equipment used by the vegetable oil industry. There are at least four firms in São Paulo which fabricate crude-oil-extraction and oil-refining equipment; one of them produces a full line, and two others specialize in solvent-extraction machinery.

Marketing of soybean products

Many firms refine and package edible oils, either processing their own crude oil or buying it from other mills. Nonetheless, about five firms dominate the production of canned soybean oil for the retail market. These same firms manufacture margarine and account for most of Brazil's margarine output. The wholesale prices of edible oils, including soybean, are price controlled by a Federal agency (CIP).

Domestic consumption of soybean cake and meal in mixed feeds is increasing, but exports continue to take the majority of the output. Brazil's commercial feed industry is centered in São Paulo and dominated by five or six firms, at least two of which crush soybeans. The industry's feed output is estimated at 120,000 metric tons monthly. Poultry feed accounts for about 70 percent of the commercially manufactured feeds in Brazil; dairy feed, 15 to 20 percent; and hog feed, about 5 percent. Soybean meal is the major protein meal used in formulated feeds, whereas corn is the major feed ingredient. Generally most of the peanut meal produced in Brazil is exported. Cottonseed meal and cake are fed to dairy cattle to supplement grass and silage. Practically all of Brazil's beef cattle are grass fed and fattened. Very little supplemental feeding is done, even during the dry season when pastures in many areas are inadequate.

In late 1969, a factory was opened near Pôrto Alegre in Rio Grande do Sul for isolating soy protein. The capacity of this plant is 1,000 metric tons of product per year. Soybean flours of various kinds are produced by a number of Brazilian companies, the largest of which has a yearly output of 2,000 to 3,000 tons.

EXPORTS

Brazil's exports are predominantly agricultural products, although in recent years exports of manufactured products have increased substantially. The total value of exports during 1969 was $2.3 billion, of which agricultural products accounted for 73 percent. Coffee is the main export item, accounting for 34 percent of the value of all exports; next are cotton, 8.5 percent; iron ore, 6.5 percent; and sugar, 4.4 percent. The export value of soybeans and soybean meal and cake was $53 million in 1969, or 2.3 percent of the value of all exports.

Soybeans

Soybean exports in 1969 totaled 310,127 metric tons valued at $29.2 million, with Italy Brazil's best customer. Other important buyers of Brazilian soybeans include West Germany, the Netherlands, Spain, and Bulgaria. The 1969 exports were at an alltime high, exceeding the former record (1967) by 5,500 tons. Brazilian soybeans are available for export during the period July through September, when export prices are generally at seasonal highs.

Port facilities in Rio Grande do Sul are a limiting factor for export volume due to shallow draft and low-volume storage and loading equipment. Many ships handling Brazilian soybeans start their loads at Pôrto Alegre and finish loading at the deeper port of Rio Grande. Soybeans move to ports by rail and truck, in bulk or bags. The terminal at Rio Grande has storage space for 20,000 metric tons, which will be enlarged to 55,000 tons, and currently can load 200 to 250 tons per hour. Rio Grande handled 54 percent of Brazil's exports during 1967-69, and Pôrto Alegre handled 27 percent.

Ports serving Paraná include the State's own port at Paranaguá, as well as Brazil's major port, Santos in São Paulo. Some soybeans have been handled through Paranaguá—10 percent of exports during 1967-69—but the main use of this port is for coffee, corn, timber, and cotton. It is served by rail, and good roads link it directly with the agricultural zones. Port facilities for handling bulk grains have been expanded during the past 2 years, and further expansion is planned. This should enable it to become Brazil's number-one grain export port.

Soybean meal and cake

Soybean meal exports totaled 274,501 metric tons during 1969, valued at an average or $80.00 a ton, f.o.b., with West Germany, the Netherlands, and Belgium the major destinations. The volume of meal exports during the 5-year period 1965-1969 averaged 178,444 tons yearly, 2,633 tons more than the average for soybeans during the same period. Rio Grande handles about 40 percent of the meal exports, followed by about 25 percent from Pôrto Alegre and 22 percent from Santos. The export volume of soybean cake is small compared with soybeans and meal. It totaled 20,865 tons in 1969, at an average F.O.B. value of $67.75 a ton. Brazil became an exporter of soybean oil in 1970 with shipments of 329,475 kilos valued at $92,253 to the Netherlands during January-June.

Export marketing and incentives

Some five or six international grain trading companies seem to dominate the export marketing of Brazil's soybeans and soybean products. These firms are active in other export commodities, so soybeans complement their activities. Exporters generally compete keenly among one another for export availabilities. A few smaller firms handle some of the export volume, with cooperatives handling an export sale from time to time.

Both the Federal and State Governments offer tax incentives on exports. In the case of soybeans, the State value-added tax (ICM) of 17 percent is generally reduced to about 9 percent in Rio Grande do Sul and in Paraná. Soybean meal and cake for export are exempt from State value-added taxes. One reason why Brazil has begun. exporting soybean oil is that the Federal Government grants special incentives to this type of product. These amount to no State (ICM) or Federal (IPI) taxes, additional credits of 4 percent towards State value-added taxes and Federal excise taxes, and no Federal income taxes on export profits. For companies having diversified operations, the ICM and IPI tax credits can mean the difference between profit and loss on an export transaction.

OUTLOOK

Production

Brazilian soybean production is expected to increase sharply during the next 5 years for many of the same reasons that contributed to the expansion in the last 5 years. Much of the expansion has been associated with official measures encouraging greater wheat production, since the cultivation of soybeans and that of wheat are closely related. The sharp expansion in soybean output will come mainly from an increase in area, as substantial improvements in yields are not anticipated in the next 5 years.

By 1975 Brazil is expected to produce 2.5 million to 3.5 million metric tons of soybeans. Paraná is expected to increase its share of the total crop considerably, rotating soybeans with corn and, in some areas, rotating with or substituting for cotton. There is a good possibility that Paraná will become Brazil's number-one producing State, with a crop of about 1.5 million tons. Expanded production is anticipated in São Paulo, too, but with limitations due to competition from other crops and the need for fully mechanized operations. Santa Catarina's area in soybeans is also expected to expand, particularly in the Itajaí Valley, where the land is well suited to this crop. Production is also forecast to expand westward into Mato Grosso—especially in the farming zones around Dourados, which extend west to the Paraguayan border—and northward into western Minas Gerais and southern Goiás as farmers are able to acquire seed conditioned for soil and climate in these areas.

Utilization

Brazil generally produces abundant quantities of oilseeds in addition to soybeans, such as peanuts and cottonseed, so it is unlikely that the domestic crushing industry will be able to absorb the entire output of soybeans

forecast for 1975. Utilization of soybean oil, based on official production estimates for 1966-68, increased at an annual rate of 11 percent. Using an estimate of 136,000 metric tons for 1970 production, and increasing it at a yearly rate of 15 percent, soybean oil utilization in 1975 could total 273,500 tons, which is the equivalent of 1.6 million tons of soybeans. Assuming that seed and feed account for 10 percent of the crop, Brazil should have 1.1 million tons of soybeans available for export in 1975, if the crop totals 3.0 million tons.

Brazil's commercial feed industry is expected to expand rapidly and thus will be utilizing greater quantities of protein meals. Although apparent domestic utilization of soybean meal dropped between 1967 and 1969, feed manufacturers are expected to increase use sharply during the next 5 years. Assuming a domestic crush of 1.6 million metric tons of soybeans and domestic utilization of meal increasing at the rate expected for soybean oil, i.e., 15 percent yearly, then soybean meal export availabilities in 1975 will total about 720,000 tons.

SUPPLY AND DISTRIBUTION OF SOYBEANS AND SOYBEAN PRODUCTS IN BRAZIL

Commodity	1966	1967	1968	1969[3]	1970[4]
Soybeans:	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*
Production	594,980	715,606	654,476	1,056,607	1,280,000
Domestic crush	395,395	423,251	472,988	611,538	800,000
Exports	121,241	304,543	65,859	310,147	300,000
Seed, feed and other[1]	78,344	(12,188)	116,639	134,922	180,000
Soybean oil:					
Production	62,488	66,729	76,002	99,157	136,000
Domestic use[2]	73,553	81,429	84,777	105,000	141,000
Exports	0	0	0	0	330
Soybean meal and cake:					
Production	267,096	272,471	328,700	412,150	560,000
Exports	184,949	125,359	234,530	295,366	460,000
Apparent domestic use[1]	82,147	147,112	94,170	116,784	100,000

[1] Includes change in stocks. [2] Includes imports. [3] Preliminary. [4] Forecast.

Source: Ministry of Agriculture, CACEX, Attache' estimates and forecasts.

SOYBEAN PRODUCTION IN BRAZIL

State	1961-65		1965		1966		1967		1968		1969	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	1,000 hectares	*1,000 metric tons*	*1,000 hectares*	*1,000 metric tons*	*1,000 hectares*	*1,000 metric tons*	*1,000 hectares*	*1,000 metric tons*	*1,000 hectares*	*1,000 metric tons*	*1,000 hectares*	*1,000 metric tons*
Rio Grande do Sul	312.3	321.4	386.4	463.1	416.3	483.3	490.9	550.8	557.0	432.6	649.1	744.4
Santa Catarina	2.8	4.4	3.4	5.2	5.7	7.6	7.3	9.2	11.5	14.8	32.1	31.7
Paraná	16.3	20.7	34.3	44.1	54.3	83.0	82.9	113.3	119.6	163.2	172.4	213.6
São Paulo	4.2	5.2	6.1	8.9	12.3	18.2	27.7	38.2	29.2	39.3	47.1	61.0
Mato Grosso	0.8	0.8	0.8	0.8	1.5	1.9	2.3	2.7	2.7	3.4	3.2	3.4
Minas Gerais	0.4	0.2	0.3	0.1	0.2	0.1	0.5	0.4	0.3	0.4	0.6	0.6
Bahia	0.4	0.8	0.5	1.0	0.4	0.9	0.5	1.0	1.6	0.8	([1])	([1])
Others	0	0	0	0	0	0	0	0	0	0	[2] 1.6	1.9
Total	337.2	353.5	431.8	523.2	490.7	595.0	612.1	715.6	721.9	654.5	906.1	1,056.6

[1] Less than 500. [2] Goiás

Source: *Anúario Estístico do Brasil.*

PRODUCTION AND UTILIZATION OF SOYBEANS IN RIO GRANDE DO SUL

Year	Area	Production	Purchases by State industry	Interstate shipments	Exports	Total utilization as specified
	Hectares	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*
1947	7,651	7,991	1,042	1,527	9,146	11,715
1948	12,889	14,285	1,642	298	12,341	14,281
1949	19,125	24,881	1,185	857	21,483	23,525
1950	24,259	33,739	1,460	1,594	21,678	24,732
1951	47,480	60,807	946	1,039	41,400	43,385
1952	58,765	77,102	3,688	817	28,941	33,446
1953	61,365	86,882	7,459	9,548	26,117	43,124
1954	62,113	109,424	8,946	1,952	24,724	35,622
1955	67,321	99,355	11,371	366	50,485	62,222
1956	72,974	107,202	12,758	10,592	41,448	64,798
1957	78,168	105,715	36,600	4,300	17,400	58,300
1958	92,863	117,448	69,400	48	34,487	103,933
1959	103,956	155,000	91,000	7,680	42,290	140,970
1960	167,384	191,503	120,000	655	0	120,633
1961	224,650	285,501	157,800	13,000	86,174	256,974
1962	294,950	227,700	120,000	600	85,055	205,655
1963	297,850	231,320	175,000	15,000	33,230	223,230
1964	305,860	185,000	145,000	6,000	0	151,000
1965	318,340	398,000	230,000	40,000	75,000	345,000
1966	351,000	440,000	280,000	18,000	110,000	408,000
1967	437,000	554,178	260,000	23,500	230,678	514,178
1968	469,000	430,000	290,000	18,000	51,000	359,000
1969	535,000	790,000	388,000	40,000	282,000	710,000
1970[1]	711,000	940,000	480,000	105,000	265,000	850,000

[1] Preliminary.

Note: The above area and production data differ somewhat from the official estimates, but appear to reflect more accurately the commercially produced crop. In addition, they provide a complete breakdown of the utilization of the commercial crop and thus contain data not published or available in official reports. Compiled from trade sources.

PROCESSING OF SOYBEANS IN BRAZIL BY STATE

Year and State	Soybeans processed	Oil output[1]	Oil extraction rate	Production of soybean meal	Production of soybean cake
1966:	*Metric tons*	*Metric tons*	*Percent*	*Metric tons*	*Metric tons*
Rio Grande do Sul	296,335	47,260	15.9	[2] 193,280	16,856
Paraná	39,310	6,586	16.8	20,406	6,982
São Paulo	59,750	8,642	14.4	29,541	31
Total	395,395	62,488	15.8	243,227	23,869
1967:					
Rio Grande do Sul	298,042	46,501	15.6	[2] 184,292	14,700
Paraná	81,144	13,106	16.2	50,007	4,167
São Paulo	44,065	7,122	16.2	19,305	–
Total	423,251	66,729	15.8	253,604	18,867
1968:					
Rio Grande do Sul	304,063	46,399	15.3	[2] 206,346	18,192
Santa Catarina	4,516	930	20.6	–	–
Paraná	82,523	15,421	18.7	52,903	5,901
São Paulo	81,792	13,236	16.3	42,767	2,591
Minas Gerais	94	16	17.0	–	–
Total	472,988	76,002	16.1	302,016	26,684
1969:					
Rio Grande do Sul	409,550	65,352	16.0	252,559	29,257
Santa Catarina	9,197	1,486	16.2	–	7,102
Paraná	97,987	17,346	17.7	57,119	12,283
São Paulo	95,625	14,973	15.7	43,096	10,734
Total	612,359	99,157	16.2	352,774	59,376

[1] Margarine production from soybeans in Rio Grande do Subwas 5,491 tons in 1966, 6,559 tons in 1967, 6,678 tons in 1968, and 48,633 tons in 1969.

[2] Excludes soybean flour; 2,759 tons in 1966; 2,390 tons in 1967; 2,068 tons in 1968; and 614 tons in 1969.

Source: *Oleos e Gorduras Vegetais,* Ministry of Agriculture.

SOYBEAN EXPORTS FROM BRAZIL BY DESTINATION

Destination	1965		1966		1967		1968		1969	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric tons	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*
Argentina	–	–	119	14	–	–	–	–	–	–
Belgium-Luxembourg	21,964	2,154	410	42	1,000	98	–	–	–	–
Bulgaria	–	–	–	–	1,750	82	10,000	1,015	53,387	5,141
Denmark	–	–	–	–	22,210	2,165	–	–	7,906	753
France	3,370	324	–	–	–	–	–	–	–	–
Germany, East	–	–	–	–	–	–	2,915	281	30,386	2,856
Germany, West	14,100	1,374	58,700	6,349	45,361	4,316	8,073	775	51,500	4,848
Hungary	–	–	–	–	4,850	466	–	–	397	41
Italy	20,646	2,025	34,536	3,582	86,513	8,438	19,443	1,874	81,224	7,584
Japan	–	–	1,000	114	3,499	348	–	–	–	–
Malaya	1,263	123	–	–	300	33	–	–	–	–
Netherlands	7,644	748	16,154	1,761	83,032	7,907	20,141	1,835	18,958	1,766
Norway	–	–	–	–	9,150	893	–	–	11,439	1,076
Paraguay	–	–	–	–	2,020	144	639	56	–	–
Portugal	–	–	–	–	–	–	–	–	5,000	465
Spain	6,299	595	10,322	1,166	43,856	4,282	4,648	455	43,130	4,084
Switzerland	–	–	–	–	1,002	71	–	–	6,800	635
United Kingdom	–	–	–	–	(1)	(2)	–	–	–	–
Total	75,286	7,343	121,241	13,028	304,543	29,243	65,859	6,291	310,127	29,249

[1] Less than 1 metric ton. [2] Less than $500.

Source: Comércio Exterior do Brasil, Ministry of Finance.

SOYBEAN MEAL EXPORTS FROM BRAZIL BY DESTINATION

Destination	1965		1966		1967		1968		1969[1]	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric tons	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*	*Metric tons*	*1,000 U.S. dol.*
United States	–	–	1	(2)	–	–	–	–	–	–
Argentina	8,242	651	5,816	501	1,191	124	1,091	105	554	49
Belgium-Luxembourg	7,809	560	12,837	1,023	3,567	292	20,632	1,653	22,268	1,806
Denmark	497	36	–	–	–	–	500	38	–	–
France	545	40	–	–	–	–	1,885	153	500	41
Germany, West	65,075	4,729	104,731	8,250	82,217	6,674	114,012	9,130	104,546	8,385
Greece	–	–	–	–	–	–	496	43	976	84
Hong Kong	–	–	199	19	–	–	100	8	49	4
Hungary	–	–	715	64	–	–	1,998	166	1,963	169
Ireland	1,788	127	3,671	297	4,270	348	6,044	504	1,418	118
Italy	198	15	5,000	430	–	–	–	–	–	–
Japan	–	–	–	–	–	–	2,381	195	–	–
Malaya	–	–	–	–	–	–	200	18	950	79
Netherlands	11,802	847	36,122	2,784	31,454	2,561	69,662	5,631	32,735	2,643
Portugal	–	–	–	–	–	–	1,114	90	–	–
Singapore	–	–	–	–	–	–	4,489	392	2,544	212
Spain	298	21	–	–	–	–	–	–	1,519	124
Sweden	995	70	1,094	89	298	24	–	–	–	–
United Kingdom	1,803	129	452	32	–	–	396	34	–	–
Cyprus	–	–	–	–	–	–	–	–	1,725	147
Lebanon	–	–	–	–	–	–	–	–	911	75
Switzerland	–	–	–	–	–	–	–	–	400	32
Other	–	–	–	–	–	–	–	–	–	–
Total	99,052	7,225	170,638	13,489	122,997	10,024	225,030	18,160	173,058	13,968

[1] Preliminary - 9 months. [2] Less than $500.

Source: Comércio Exterior do Brasil, Ministry of Finance.

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